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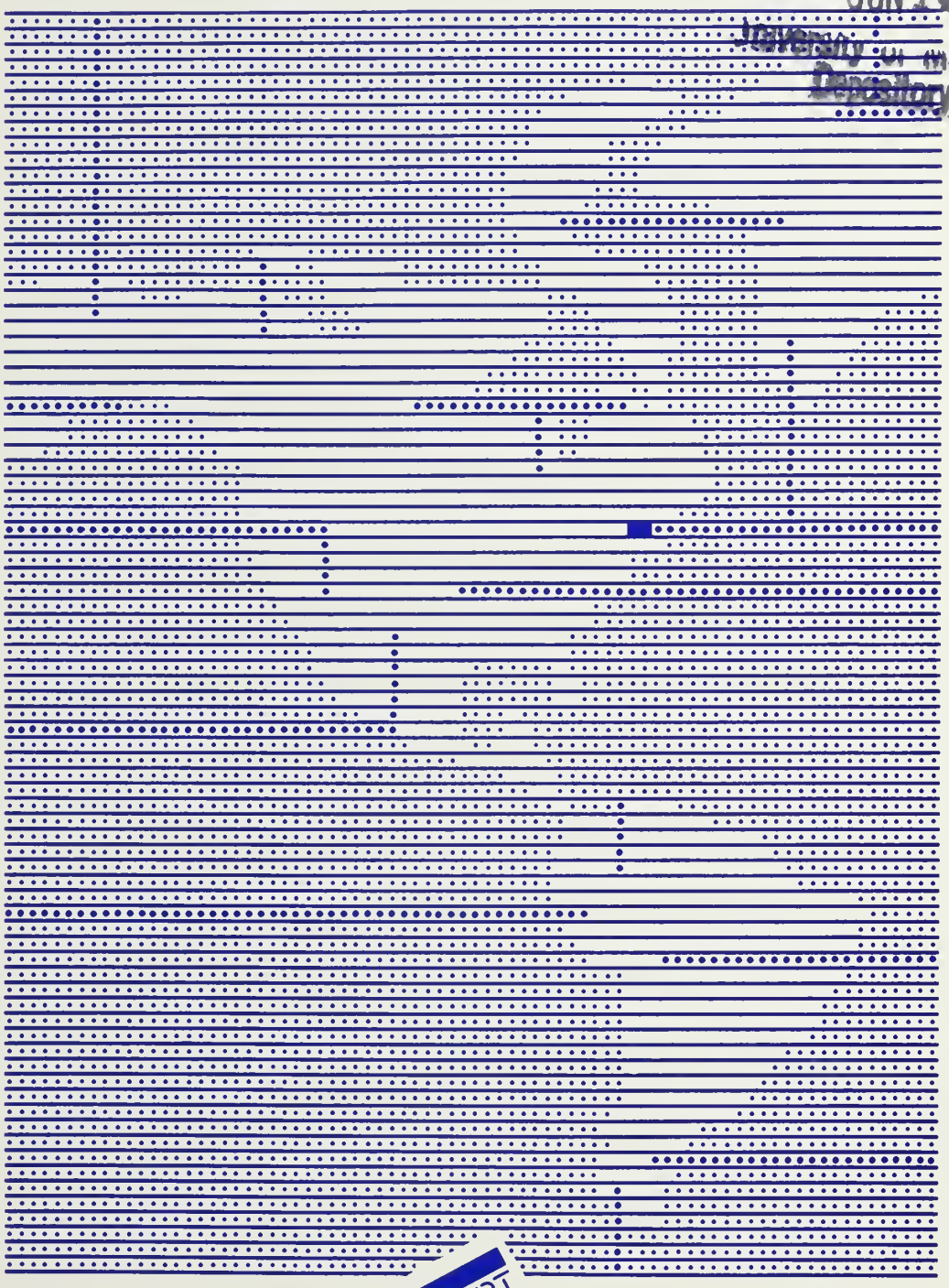

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MASSACHUSETTS OFFICE OF INTERNATIONAL TRADE AND INVESTMENT (MOITI)

The Massachusetts Office of International Trade and Investment was established in January, 1984 to address the exporting needs of Massachusetts firms. MOITI is a quasi-public agency that assists Massachusetts companies at no charge to the company.

The primary objective of MOITI is to work with small and medium sized companies to assist them in entering an export market for the first time or to help them increase their export sales. Towards this end, MOITI provides one-on-one corporate counseling, has led numerous overseas trade missions, has attended international trade shows accompanied by Massachusetts companies and actively develops international contacts and trade leads. MOITI also has available an export database which provides contacts in overseas markets to assist Massachusetts companies in their export promotion.

MOITI has published a *Massachusetts International Biomed Directory* as part of our mission to promote the Massachusetts biomedical industry internationally. MOITI is the first contact many international companies make who want to identify Massachusetts companies within the biomedical industry interested in international distribution, licensing agreements or strategic partners.

For further information, please contact:

Massachusetts Office of International Trade and Investment
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Telex: 5101012536

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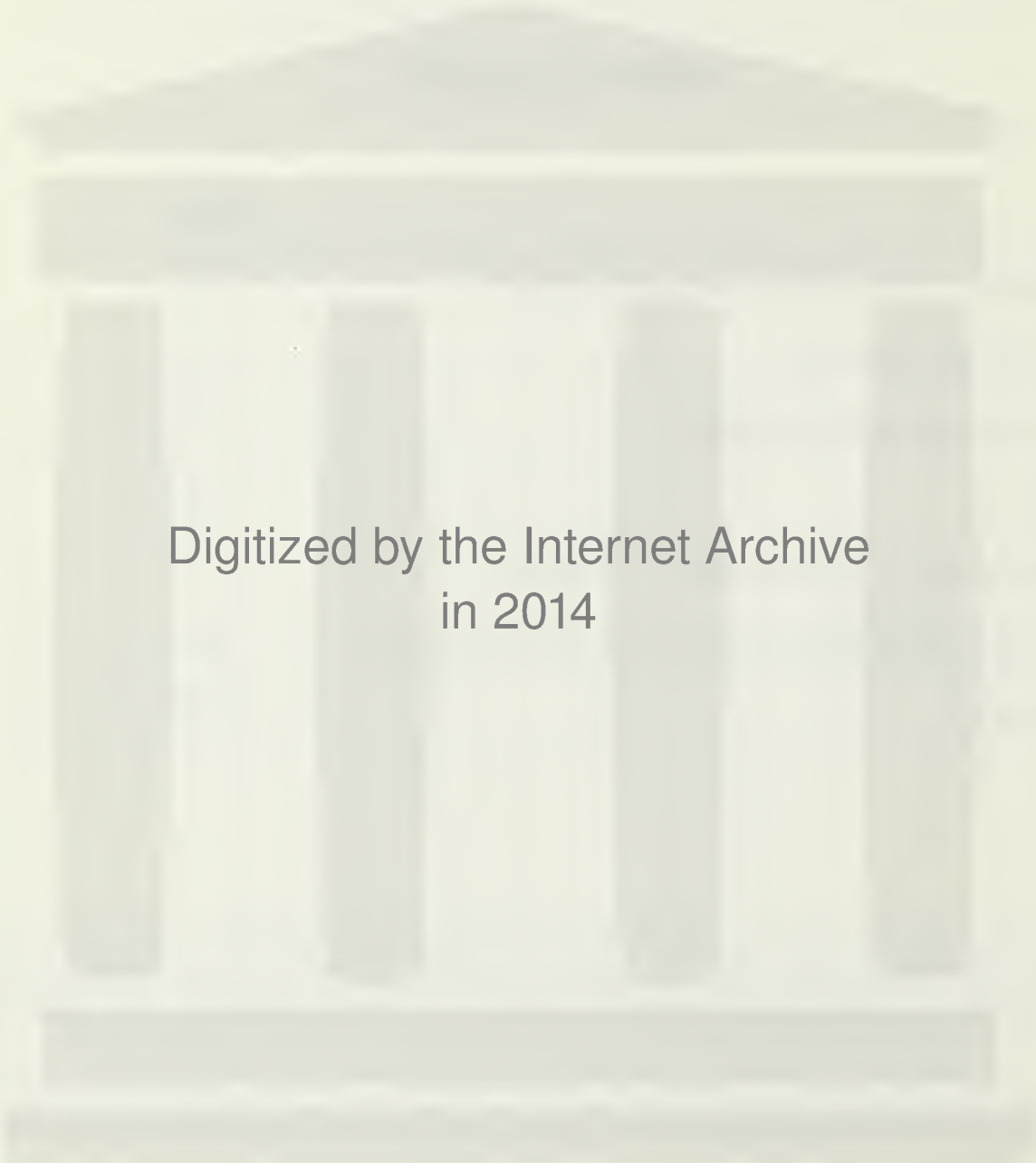
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AN OVERVIEW OF THE MASSACHUSETTS BIOMEDICAL INDUSTRY

Massachusetts is one of the principal economic, educational, technological, and financial centers of the United States, enjoying a unique set of assets rarely available in the same combination in other regions of the country. It is a world center for basic and applied research, new product development, and entrepreneurship. With one of the highest concentrations of colleges, universities and hospitals in the nation, Massachusetts has become a world center for the development of new technologies including biotechnology, new materials and software. Massachusetts is also the home of a highly skilled and educated labor force, which is well adapted to technological change and innovation.

These attributes have created an environment where innovative companies are continually being spun-off from existing firms and local universities, and which acts as a magnet for firms from outside of the state considering a new American location. Supporting these attributes is a strong and dynamic financial community together with a state government that is committed to business growth. There exists as well a strong physical and service infrastructure that is necessary for businesses to operate profitably.

Biotechnology in Massachusetts is a dynamic and sophisticated industry. Many of the factors that have contributed to Massachusetts' pre-eminence in high technology have also thrust the state into the vanguard of the biotechnology industry. Over the last decade, Massachusetts has emerged as a major center in the United States for biotechnology research/development and production. A number of factors have contributed to this development, including the historical receptivity of the New England area to risk-taking and innovation. Perhaps, however, the more important factor is Massachusetts' educational excellence. The great concentration of world class educational, research, and medical facilities located in Massachusetts provides both a magnet to and a rich source of talented scientists, technicians, and other professionals.

The prospects for the continued growth of the Massachusetts biotechnology industry are very good. In fact, a recent report by the Massachusetts Biotechnology Council estimates that as many as 150 biotechnology companies with revenues of $3 billion and 75,000 employees will exist in Massachusetts by the year 2000.

Companies that decide to locate in Massachusetts are joining a unique industrial community. Although the field is a competitive one, the state's biotechnology community members work cooperatively with each other. As a result, Massachusetts has one of the oldest and most active biotechnology industry associations in the United States, the Massachusetts Biotechnology Council (MBC). The MBC provides a network that serves common interests. It represents biotechnology concerns at the state level, endorsing supportive legislation and actively participating in the regulatory process. The Council works closely with local governments to produce responsible regulations that allow companies to operate competitively while providing adequate safeguards to communities.

The importance of biotechnology to the state's economic future is recognized at all levels of state and local government. A number of state agencies and organizations include on their program agendas support strategies for the development of biotechnology-related activities. Since it was established in 1985, the Massachusetts Centers of Excellence Corporation, a quasi-public agency, has awarded a dozen biotechnology grants to companies and academic institutions for technology transfer projects valued at over $2 million.

The Massachusetts Biotechnology Research Institute (MBRI) is a consortium of seven Worcester-area universities and research institutions actively involved in stimulating technology transfer activities in the state through capital assistance and incubator facilities. MBRI is located at the 100 acre Massachusetts Biotechnology Research Park in Worcester, established adjacent to the University of Massachusetts Medical Center.

EDUCATIONAL INFRASTRUCTURE

Massachusetts' reputation as a leading center for learning in the United States is upheld by the continuing stream of new ideas that originate from such outstanding public and private universities, as Harvard University, the Massachusetts Institute of Technology, the University of Massachusetts, Tufts and Boston University. With its 129 public and private colleges and universities, Massachusetts has the highest concentration of institutions of higher learning of any state in the nation. These institutions attract over 400,000 students per year, a great proportion of whom choose to remain in the state after completing their studies.

According to the most recent Gorman Report, which ranks the top twenty universities in the United States in each of the major academic disciplines, Massachusetts graduate programs are rated first in the nation in almost all biomedical and engineering related fields. M.I.T. is first in microbiology, cellular/molecular biology, and biochemistry, while Harvard is first in chemistry. M.I.T. and Harvard rank third and fourth in bioengineering and biomedical engineering respectively.

The number of university programs in life sciences is increasing as is the matriculation in existing programs. Table 1 lists the masters and doctoral programs in the biomedical fields in Massachusetts.

Although there is not a central source that collects and maintains information on the annual number of Massachusetts students enrolling and graduating in biomedical disciplines, a phone survey of the major universities in the state was conducted. Table 2 lists those results.

In addition to those graduate and Ph.D programs listed in Table 2, Massachusetts has four medical schools: Boston University (BU), Harvard University, Tufts University, and the University of Massachusetts Medical School as well as one veterinary school, Tufts University School of Veterinary Medicine. Enrollment for these programs is outlined in Table 3.

TABLE 1

MASTERS AND DOCTORAL PROGRAMS IN THE BIOMEDICAL FIELD IN MASSACHUSETTS

UNIVERSITY	PROGRAM
Boston College (Boston)	biochemistry, biology and biomedical sciences
Boston University (Boston)	cell biology, neurobiology, biochemistry, biophysics, chemistry microbiology, pharmacology and experimental therapeutics, biomedical engineering
Brandeis University (Waltham)	biology, cell biology development, genetics, microbiology, biochemistry
Clark University (Worcester)	biochemistry, biochemical and developmental genetics, microbiology, biochemistry
Harvard University (Cambridge)	cellular and development biology, cancer biology, molecular genetics, cell biology, biology, bioelectricity and biomechanics, biochemistry, nutritional biochemistry, biomedical chemistry, chemistry, biophysics, immunology, virology, pharmacology, toxicology, biomedical engineering, medical engineering, medical physics
M.I.T. (Cambridge)	biochemistry, biological chemistry, cellular and development biology, neurobiology, immunology, microbiology, biochemical engineering, medical engineering, medical physics

TABLE 1 (CONTINUED)

UNIVERSITY	PROGRAM
Northeastern University (Boston)	biology, biomedical sciences, pharmaceuticals, pharmacology, toxicology, medical chemistry, medical laboratory science
Tufts University (Medford)	cellular biology, developmental biology, reproductive biology, biochemistry, pharmacology, immunology, microbiology, biomedical engineering
University of Massachusetts (Amherst/Boston/ Worcester)	molecular and cellular biology, biotechnology, biomedical science, microbiology, neurobiology, immunology, biochemistry, molecular genetics, pharmacology
Worcester Polytechnic Institute (Worcester)	biology, biomedical and clinical engineering

Source: Massachusetts Office of International Trade, 1988.

TABLE 2

STUDENTS ENROLLED IN BIOMEDICAL PROGRAMS IN MASSACHUSETTS

UNIVERSITY	PROGRAM
Boston University (Boston)	Biochemistry (1986) - 8 Ph.D - 10 M.S. - 80 matriculated students Chemistry (1986) -9 Ph.D -3 M.S. Microbiology -3 Ph.D -1 M.S. -33 matriculated students Biology -20 Ph.D -8 M.S. -111 matriculated students Biomedical Engineering -20 Ph.D candidates -65 matriculated students Pharmacology and Experimental Therapeutics -1 Ph.D -9 matriculated students

TABLE 2 (CONTINUED)

UNIVERSITY	PROGRAM
Boston University (Continued)	Medical School (1986) -17 Ph.D/M.D. -21 M.S./M.D.
University of Massachusetts (Boston)	Biology Department (1988) -50 B.S. -4 M.S.
	Biotechnology and Biomedical Science (1988) -4 M.S. -13 matriculated students
Harvard University (Cambridge)	Biology (1986) -7 Ph.D -11 M.S. -68 matriculated students
	Cellular and Developmental Biology (1986) -11 Ph.D -5 M.S. -62 matriculated students
	Division of Medical Sciences (M.D./Ph.D) (1986) -23 Ph.D -238 matriculated students
	Biochemistry and Molecular Biology (1986) -7 Ph.D -62 matriculated students

TABLE 2 (CONTINUED)

UNIVERSITY	PROGRAM
Harvard University (Continued)	Genetics (1988) -4 Ph.D -58 matriculated students Biological Chemistry and Molecular Pharmacology (1988) -8 Ph.D -56 matriculated students Biophysics (1986) -3 Ph.D -36 matriculated students Microbiology and Molecular Genetics (1988) -2 Ph.D -43 matriculated students Pharmacology (1986) -3 Ph.D -17 matriculated students Immunology (1988) - 4 Ph.D - 39 matriculated students
Brandeis University (Waltham)	Biology* (1988) -7 Ph.D -1 M.S. *(includes cell biology, genetics, microbiology and developmental biology)

TABLE 2 (CONTINUED)

UNIVERSITY	PROGRAM
Brandeis University (Continued)	Chemistry (1988) -10 Ph.D -7 M.S. Biochemistry (1988) -6 Ph.D -1 M.S.
Tufts University (Medford)	Biology* (1986) -3 Ph.D -5 M.S. -80 B.S. -21 matriculated students * (includes cellular, developmental, and reproductive biology) Pharmacology (1987) - 16 Ph.D - 1 M.S.
Clark University (Worcester)	Biology (1986) -3 Ph.D -4 M.S. -20 matriculated students Biochemistry (1988) -1 Ph.D Chemistry (1988) -2 Ph.D -2 M.S.

TABLE 2 (CONTINUED)

UNIVERSITY	PROGRAM
M.I.T. (Cambridge)	Applied Biological Sciences (1986) -20 Ph.D -10 M.S. -103 matriculated students Chemistry (1986-1988) -116 Ph.D -11 M.S. -225 matriculated students Medical Engineering/Physics (1986) -4 Ph.D -42 matriculated students
Worcester Polytechnic Institute (Worcester)	Biology and Biotechnology (1986-1988) -3 Ph.D -5 M.S. -23 matriculated students Biomedical and Clinical Engineering (1986-1988) -3 Ph.D -20 M.S. -18 matriculated students
Northeastern University (Boston)	Biology (1988) -2 Ph.D -12 M.S. -65 matriculated students

TABLE 2 (CONTINUED)

UNIVERSITY	PROGRAM
Northeastern University (Continued)	Pharmacology (1988) -4 Ph.D -3 M.S. -30 matriculated students Biomedical Science* (1988) -3 Ph.D -11 M.S. *(includes pharmaceutics, medical science, medical technology, toxicology)
University of Massachusetts (Amherst)	Molecular and Cellular Biology (1986) -1 M.S. -37 matriculated students Biochemistry (1986) -4 Ph.D -1 M.S. -7 matriculated students

Source: Massachusetts Office of International Trade, 1988

TABLE 3

MEDICAL SCHOOLS IN MASSACHUSETTS

UNIVERSITY	NUMBER OF GRADUATES PER YEAR	TOTAL ENROLLMENT
Harvard University	165	665
Tufts University (Medical)	150	600
Boston University	150	620
University of Massachusetts	100	420
Tufts University (Veterinary)	61	264

Source: Massachusetts Office of International Trade, 1988

TEACHING INSTITUTIONS AND HOSPITALS

Massachusetts' four medical schools and their 22 major affiliated teaching hospitals are world-renown for their excellence in patient care. Clients from around the world make pilgrimages to Massachusetts to secure medical consultation and intervention. Likewise, students from around the world seek basic professional training in Massachusetts' medical schools and advanced clinical experience as residents in the teaching hospitals. A listing of affiliated teaching hospitals in Massachusetts appears in Table Four.

Besides providing patient care and medical education, faculty at academic medical centers engage in biomedical research. Because the research almost always involves human subjects or was promoted by patient care problems, it is applied rather than theoretical in nature and hence likely to have the potential for commercialization.

Due to the commercial significance of both patient-oriented biomedical research and late-stage clinical undertaken in academic medical centers, extensive ties have developed between researchers at these centers and biotechnological, pharmaceutical, medical device and instrumentation corporations. An example of the level of these ties is the 1980 commitment by Hoechst to fund a $50 million genetics department at Massachusetts General Hospital. In addition, New England Medical Center with 30-40 percent of its faculty engaged in consulting or working with companies is typical of many of the state's academic medical centers.

The process by which businesses formally and informally consult with researchers at academical medical centers also serves as a major conduit for technology transfer in the medical field. Given the unique density of first-rate medical activities in Massachusetts' academic medical centers, it is not surprising that the connections between the business sector and medical researchers is strong and growing.

Teaching hospitals in Massachusetts with research funding over $1 million include:

-Boston University Hospital (Boston)
-Brigham and Women's Hospital (Boston)
-Beth Israel Hospital (Boston)
-Children's Hospital (Boston)
-Dana Farber Cancer Institute (Boston)
-Massachusetts Eye and Ear Infirmary (Boston)
-Massachusetts General Hospital (Boston)
-McLean Hospital (Belmont)
-New England Deaconess Hospital (Boston)
-New England Medical Center (Boston)
-St. Elizabeth's Hospital (Boston)
-University of Massachusetts Hospital (Worcester)

TABLE 4

MEDICAL SCHOOLS & THEIR MAJOR AFFILIATED TEACHING HOSPITALS

BOSTON UNIVERSITY MEDICAL SCHOOL
University Hospital
Carney Hospital
Veterans Administration Medical Center, Boston
Boston City Hospital

HARVARD UNIVERSITY MEDICAL SCHOOL
Brigham and Women's Hospital
Beth Israel Hospital
Children's Hospital Medical Center
Dana-Farber Cancer Institute
Massachusetts Eye and Ear Infirmary
Massachusetts General Hospital
McLean Hospital
Mount Auburn Hospital
New England Deaconess Hospital

TUFTS UNIVERSITY MEDICAL SCHOOL
New England Medical Center
Baystate Medical Center
Faulkner Hospital
St. Margaret's Hospital for Women
St. Elizabeth's Hospital

UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
University of Massachusetts Hospital
Berkshire Medical Center
Worcester Memorial Hospital
St. Vincent Hospital

Source: COTH Directory 1987, Council of Teaching Hospitals, Association of American Medical Colleges

RESEARCH

Massachusetts is a major center for medical and biological research. There are several ways to measure the level of research occurring in Massachusetts, but perhaps the best measure is the amount of federal dollars flowing into the state's universities and research centers (see Table 5). Most research and development funding in the life sciences is sponsored by the National Institute of Health (NIH) or the National Science Foundation (NSF). According to the latest NIH Data Book, Massachusetts with only 2.4 percent of the U.S. population received 13 percent of all NIH grants for research and development and 13 percent of all grants for research training. In comparison, California, which ranks first in the nation, has 9.4 percent of the U.S. population, four times that of Massachusetts, and only receives 17 percent of all NIH grants for research and development and 16 percent of all grants for research training. For both research and development and funding for research training the top ten states account for 80 percent and 70 percent of all NIH/NSF funding respectively.

An additional measure of the research activity in Massachusetts is the number of doctoral scientists residing in Massachusetts in comparison to other states (see Table 6). What needs to be kept in mind when reviewing the following table is that except for Maryland and North Carolina which have comparable populations, the other states listed range from two to five times the population of Massachusetts.

The largest part of Massachusetts' research industry is comprised of university labs, centers and institutes. In order to give a flavor of the type of research occurring in Massachusetts a description of a few of the university research facilities in the state is listed below:

M.I.T.

Resources at M.I.T. include the Clinical Research Center, with a 12-bed hospital and outpatient services, the Center for Cancer Research, and the Biotechnology Process Engineering Centers. M.I.T. is also affiliated with

TABLE 5

NIH RESEARCH AND DEVELOPMENT AWARDS
TO TOP TEN STATES
FISCAL YEAR 1986
(in thousands of dollars)

STATE	TOTAL	% OF TOTAL
1. California	649,508	17
2. New York	562,625	15
3. MASSACHUSETTS	473,137	13
4. Maryland	275,696	7
5. Pennsylvania	249,892	7
6. Texas	214,556	6
7. Illinois	152,870	4
8. North Carolina	152,625	4
9. Washington	133,089	4
10. Connecticut	121,763	3
USA - TOTAL	$3,739,147	

Source: National Institute for Health Data Book 1986.

TABLE 6

NIH RESEARCH TRAINING
TOP TEN STATES
FISCAL YEAR 1986
(in thousands of dollars)

STATE	TOTAL	% OF TOTAL
1. California	$ 35,252	16
2. MASSACHUSETTS	27,990	13
3. New York	24,376	11
4. Maryland	13,213	6
5. Pennsylvania	11,435	5
6. North Carolina	9,727	4
7. Illinois	8,737	4
8. Connecticut	8,565	4
9. Washington	7,621	4
10. Texas	7,466	3
USA - TOTAL	$ 217,149	

Source: National Institute for Health Data Book 1986.

the Whitehead Institute for Biomedical Research and the Harvard-M.I.T. Division of Health Sciences and Technology, which awards a joint M.D./ Ph.D degree.

Biotechnology Process Engineering Center (BPEC):
A $20 million engineering research center initiative of the National Science Foundation, the BPEC is the first NSF-sponsored national center. Established at M.I.T. in 1985, the BPEC provides cross-disciplinary educational and research programs and maintains an active involvement with industry. The center is conducting generic applied research involving biotechnology scale-up and manufacturing, as well as training students and providing short-term courses and lab practicum for scientists from industry. The center hopes to address advanced concepts in the manufacturing of complex therapeutic proteins. The three main areas currently being researched include biological principles in protein production, engineering principles in protein production, and downstream processing in biotechnology.

The BPEC has an industrial consortium comprised of companies in the biotechnology industry. Through the Technical Coordination and Technology Transfer offices, consortium members are kept up-to-date on new technological discoveries and other activities occurring at the center. The Consortium also provides its members with updated lists of graduates available for employment, highlighting specific areas of expertise and other relevant information.

The center provides personnel exchange programs in which participants may come to the center to learn about biotechnology from the basics onward, gaining valuable laboratory experience. Since 1985, over twenty visiting scientists from around the world have participated in BPEC programs for periods ranging from three months to one year. Undergraduate participants in BPEC currently number 73 and come from thirteen different departments at M.I.T. In 1987, a total of sixteen post-doctoral research associates were involved with the Center.

The Whitehead Institute:
A non-profit, independent basic research and teaching institution. The Institute is affiliated with M.I.T. in its teaching activities, but its finances and staff are wholly its own responsibility. Some of the nation's most renowned scientists are directing the laboratories and research projects at the Institute. David Baltimore, one of the youngest recipients of the Nobel Prize in Physiology or Medicine, is currently engaged in research there.

The Institute offers a unique fellowship program which provides three to five year appointments to promising young scientists, giving them laboratory space and independent status to pursue their research without teaching responsibilities.

TUFTS UNIVERSITY

Biotechnology Engineering Center (BEC):
The BEC is an interdisciplinary education, research, and development center that sponsors educational programs and conducts basic and applied research in biochemical process technology. The center's pilot fermentation plant is one of the largest academically based facilities of its kind in New England. Collaboration with a number of biotechnology companies enables the BEC to address specific problems in microbial fermentation, mammalian cell culture, scale-up, product purification techniques, and applied enzymology. The National Science Foundation has just awarded the center a $670,000 grant.

In a collaborative effort with the researchers at Tufts University School of Medicine and the Massachusetts General Hospital, scientists at the BEC hope to simplify the preparation of cells that search out and destroy cancerous tumors. The center's researchers are also working to promote human and animal health in Third World countries through the production of new vaccines and diagnostics. The center's capabilities in such areas as gene manipulation, fermentation, and mammalian cell culture enhance ongoing research at Tufts in infectious diseases, parasitology,

TABLE 7

NUMBER OF DOCTORAL SCIENTISTS IN THE LIFE SCIENCES
TOP TEN U.S. STATES
(1983)

STATE	BIOLOGICAL SCIENCES
1. California	7,013
2. New York	5,748
3. Maryland	3,460
4. Texas	3,179
5. Pennsylvania	2,812
6. Illinois	2,646
7. MASSACHUSETTS	2,639
8. North Carolina	2,011
9. Ohio	1,993
10. Michigan	1,929

STATE	MEDICAL SCIENCES
1. New York	2,690
2. California	2,451
3. Pennsylvania	1,504
4. Maryland	1,343
5. Texas	1,236
6. Illinois	1,226
7. Michigan	1,061
8. Ohio	879
9. MASSACHUSETTS	842
10. New Jersey	783

Source: Statistical Abstract 1985 (National Science Foundation)

immunology, and other areas relevant to Third World health problems being addressed by the University's Veterinary and Medical schools and the School of Nutrition.

TRAINING RESOURCES: BAY STATE SKILLS CORPORATION

The Bay State Skills Corporation (BSSC) was incorporated in 1981 to provide training programs for high demand occupations in Massachusetts and is the primary training organization in the state. Companies qualifying for training assistance enter into a memorandum of agreement with the BSSC, specifying the type of training desired. BSSC then arranges for delivery of the training by non-profit training organizations within the state's education systems or from the private sector.

BSSC's 50/50 Matching Grant Program provides non-restrictive funds to develop specialized training for skills from entry to advanced levels. In 1986-1987, BSSC awarded $1.9 million to 26 educational institutions to train 1,152 people. BSSC requires that participating companies match BSSC funds by giving of their staff time and expertise, by donating equipment and supplies, and by offering internships or other contributions of value which will directly transfer corporate expertise into the educational setting. Contributions from the company many include cash, equipment, instructors, and other components of a good strong training program. The training takes place at existing schools, colleges and universities, and training centers in the state. If the company prefers, its own facilities and employees may be used as part of its in-kind contribution.

Examples of BSSC 50/50 Matching Grant Program in biotechnology are outlined on the following pages:

1. BOSTON UNIVERSITY/BIOMEDICAL LABORATORY AND CLINICAL SCIENCES (1987-1988)

PROGRAM:	Two courses for an Associate and Bachelors of Science degree.
AUDIENCE:	Medical technicians seeking advancement; high school graduates; employed individuals seeking career change.
CURRICULUM:	-Medical Terminology and Microcomputers -Introduction to Biomedical Laboratory Sciences
PRIVATE SECTOR PARTNERS:	NEN Medical Products; Damon Clinical Hemagen Diagnostics, H.P. Hood, Inc.

2. TUFTS UNIVERSITY/BIOTECHNOLOGY, BIOCHEMICAL ENGINEERING (1987)

PROGRAM:	Biotechnology Processing
AUDIENCE:	15 graduated students in the Biotechnology Engineering Center under the auspices of the College of Special Studies at Tufts.
CURRICULUM:	Lectures: -microbial fermentation -preparative mammalian cell culture -protein/enzyme purification -pilot plant and production operations -analytical biochemistry -quality control -regulatory affairs -Lab work in pilot plant operations, company visits

PRIVATE SECTOR PARTNERS:	Instrumentation Laboratory, Cambridge Research Laboratory, Hygeia Science, BioRational Technologies, Northeast Cryogenics, Inc.

3. TUFTS UNIVERSITY/BIOTECHNOLOGY PROCESS DEVELOPMENT (1986)

PROGRAM:	Biotechnology Process Development
AUDIENCE:	15 students in entry level training 17 students in advanced level training
CURRICULUM:	Entry level training for biotechnology plant technicians Advanced level courses were developed: -principles of cell and microbe cultivation -biotechnology processing projects laboratory
PRIVATE SECTOR PARTNERS:	A.D. Little, Bioassy Systems Research Corp., Biofluids, Inc., Biopure Fine Chemicals, Biogen, Charles River Laboratories, Damon Biotech, Du Pont NEN, Genetics Institute, Hygeia Sciences, Waters Chromatography

4. TUFTS UNIVERSITY/MEMBRANE SEPARATION (1988)

PROGRAM:	Development and presentation of a course which will provide participants with fundamentals and practical aspects of membrane processes.
AUDIENCE:	Graduate and advanced undergraduate students enrolled in degree programs at Tufts in engineering and science fields; individuals currently employed in the chemical/biotechnology processing industries

CURRICULUM:	Presentation on the full spectrum of industrially practiced membrane separation-ultra and micro filtration, reverse osmosis, electrodialysis, membrane distillation and extraction, and membrane bioreactors
PRIVATE SECTOR PARTNERS:	Abcor/Koch Membrane Systems, A.G. Technology, Amicon, Ionics, Memteck Corp, Sepracor

5. WORCESTER POLYTECHNIC INSTITUTE/PROTEIN PURIFICATION & SEPARATION METHODS (1986)

PROGRAM:	Protein purification and separation methods
AUDIENCE:	18 graduate students pursuing M.S. and Ph.D degrees in Biotechnology and/or Chemical Engineering
CURRICULUM:	Advanced level, 10-hour per week full semester course. Course offers hands-on training in the methods necessary to assist in the design and implementation of product/protein processing for the biotechnology industry
PRIVATE SECTOR PARTNERS:	Biopure Fine Chemicals, Integrated Genetics, Millipore Corp., Zymark Corp.

A/G Technology Corporation

34 Wexford Street
Needham, MA 02194
Tel.: 617-449-5774
Established: 1981
Employees: 10
Contact: Mr. Myles Kleper
Title: Vice President

Product Code:
Suppliers

Product Description:
Purification and separation devices, ultrafiltration and microfiltration, hollow fiber membranes cartridges, steam-in-place process scale ultrafiltration and microfiltration, oxygen enriched air generation systems.

Abiomed Corp.

33 Cherry Hill Drive
Danvers, MA 01923
Tel.: 508-777-5410
Fax : 508-777-1561
Established: 1981
Employees: 65
Contact: Mr. David Lederman
Title: President

Product Code:
Diagnostic

Product Description:
Medical laser and imaging equipment.

Acra-Cut, Inc.

989 Main Street
Acton, MA 01720
Tel.: 508-263-2210
Fax : 508-263-4102
Established: 1983
Employees: 20
Contact: Mr. John Baker
Title: President

Product Code:
Medical/Surgical

Product Description:
Disposable and reusable cranial perforators for neurosurgery. Units for adults and pediatrics in a variety of sizes.

Advanced Instruments, Inc.

1000 Highland Avenue
Needham Heights, MA 02194
Tel.: 617-449-2000
Fax : 617-455-8468
Established: 1955
Employees: 100
Contact: Mr. Romano Micciche
Title: President

Product Code:
Medical/Surgical;Laboratory

Product Description:
Biomedical equipment for clinical labs, emergency rooms, ICUs, pediatric and neonatal wards.

Advanced Magnetics, Inc.

61 Mooney Street
Cambridge, MA 02138
Tel.: 617-497-2070
Fax : 617-497-6927
Established: 1982
Employees: 16
Contact: Mr. Jerome Goldstein
Title: President

Product Code:
Diagnostics;Suppliers

Product Description:
Radioimmunoassay kits for prostanglandins, leukotrines, HETEs and cyclic nucleotides, magnetic affinity separations solid phases for radioimmunoassays, DNA probe assays, cell sorting. Custom work immunoassays, and magnetic separations.

Advanced Mechanical Technology Inc.

151 California Street
Newton, MA 02158
Tel.: 617-964-2042
Fax : 617-964-6234
Established: 1976
Employees: 46
Contact: Dr. Walter Syniuta
Title: President

Product Code:
Other

Product Description:
Produces force torque platforms, gait analyzers and physiological telemetry units used primarily in sports medicine applications.

Advanced NMR Systems

30 Sonar Drive
Woburn, MA 01801
Tel.: 617-938-6046
Fax : 617-938-8022
Established: 1983
Employees: 23
Contact: Mr. Ian Pykett
Title: President

Product Code:
Diagnostic; X-Ray

Product Description:
Nuclear magnetic resonance imaging tomography systems. Used in clinical and research applications including the development of high speed imaging and multinuclear imaging.

Alkermes, Inc.

26 Landsdown Street
Cambridge, MA 02139
Tel.: 617-494-0171
Fax : 617-494-9263
Established: 1988
Employees: 14
Contact: Mr. Stuart Davidson
Title: President

Product Code:
Therapeutics

Product Description:
Research and development for carrying CNS therapeutics across blood brain barrier. Drug research and development includes cancer, neurodegenerative disorder, and AIDS dementia. Delivery strategies using endogenous protein and CNS homing agents.

Alko Diagnostic Corp.

333 Fiske Street
Holliston, MA 01746
Tel.: 508-429-4600
Fax : 508-429-4900
Employees: 13
Contact: Mr. Alexander Kovacs
Title: President

Product Code:
Diagnostic;Laboratory

Product Description:
Manufactures consumable reagents and labware electrodes and other accessories for clinical laboratory instruments. Specializes in supplies for automated electrolyte, pH blood gas and chemistry analyzers.

American BioAnalytical Inc.

10 Huron Drive
Natick, MA 01760
Tel.: 508-655-4336
Established: 1974
Employees: 12
Contact: Mr. Vincent Cooney
Title: President

Product Code:
Laboratory

Product Description:
Manufactures cell culture media, laboratory reagents and bacteriological filters.

American Biotechnologies

359 Allston Street
Cambridge, MA 02139
Tel.: 617-547-5535
Fax : 617-876-1268
Established: 1987
Employees: 18
Contact: Mr. Simon Mckenzie
Title: President

Product Code:
Suppliers

Product Description:
Intermediate components and custom services in plasnio production, oligonucleotide synthesis, bacteriophage production, vector construction, subcloning, diagonal screening (viral), monoclonal antibody screening and production.

American Optical Corp.

14 Mechanic Street
Southbridge, MA 01550
Tel.: 508-765-9711
Established: 1833
Employees: 1250
Contact: Mr. Maurice J. Cunniffe
Title: Chairman & CEO

Product Code:
Ophthalmic

Product Description:
Manufactures eyeglass frames and lenses, hard and soft contact lenses, ophthalmic supplies and accessories.

Amicon Division

(W.R. Grace & Co.)
24 Cherry Hill Drive
Danvers, MA 01923
Tel.: 617-777-3622
Fax: 617-777-6204
Established: 1963
Employees: 300
Contact: Mr. Peter Rigopulos
Title: President

Product Code:
Suppliers

Product Description:
Ultrafiltration membrane devices for separation of molecular and particulate components, chromatographic media, columns and systems for refined purification process, hollow fiber cell culture apparatus and serum free media, blood filtration.

Andonian Cryogenics Inc.

26 Farwell Street
Newtonville, MA 02160
Tel.: 617-969-8010
Employees: 32
Contact: Mr. Martin Andonian
Title: President

Product Code:
Other

Product Description:
Manufactures cryogenic instrumentation and containers, including liquid nitrogen and liquid helium containers, transfer lines, level gauges and level controls.

Angenics, Inc.

100 Inman Street
Cambridge, MA 02139
Tel.: 617-876-6468
Fax: 617-876-7965
Established: 1981
Employees: 65
Contact: Mr. Andre de Bruin
Title: President

Product Code:
Diagnostics;Animal

Product Description:
BEST TEST: bovine estrogen levels; SPOT TEST: antibiotics in milk. Research includes latex agglutination assays and delivery systems for a wide range of human and animal diagnostics.

Angiographic Devices, Corp.

300 Foster Street
Littleton, MA 01460
Tel.: 508-486-4997
Fax: 508-486-9363
Established: 1980
Employees: 7
Contact: Mr. John Grady
Title: President

Product Code:
X-Ray

Product Description:
Cardiac catheterization and general angiographic medical X-ray systems.

Applied Biotechnology

80 Rogers Street
Cambridge, MA 02142
Tel.: 617-492-7289
Fax: 617-492-8438
Established: 1983
Employees: 44
Contact: Mr. Steven Peltzman
Title: President

Product Code:
Therapeutics;Diagnostics;Animal

Product Description:
Researches and develops vaccines and ocogene-based cancer products through advanced biology and recombinant technology. The focus is on recombinant live virus systems and production for the preservation of animal and human infectious diseases such as swine pseudorabies, leprosy.

Applied Fiberoptics, Inc.

East Main Street
Southbridge, MA 01550
Tel.: 508-765-9121
Fax: 508-764-3639
Established: 1968
Employees: 25
Contact: Mr. J. Will Hicks
Title: President

Product Code:
Medical/Surgical

Product Description:
Fibre optic cables, high intensity light sources, operating head lights, hand held lighted surgical instruments, microscopes and cloposcopes.

Applied Science Laboratories

334 Bear Hill Road
Waltham, MA 02154
Tel.: 617-890-5100
Fax : 617-890-7966
Established: 1961
Employees: 25
Contact: Mr. Robert Sinclair
Title: President

Product Code:
Ophthalmic

Product Description:
Manufactures high performance ophthalmological diagnostic instrumentation including eye view monitoring, corneal thickness, and eye tracking systems.

APV Gaulin

44 Garden Street
Everett, MA 02149
Tel.: 617-387-9300
Fax : 617-387-4431
Established: 1909
Employees: 150

Product Code:
Suppliers

Product Description:
Cell disruption homogenizers; heat exchangers.

Aspen Technology

251 Vassar Street
Cambridge, MA 02139
Tel.: 617-497-9010
Fax : 617-497-7806
Established: 1981
Employees: 60
Contact: Mr. Kenneth Morse
Title: Director

Product Code:
Suppliers

Product Description:
Software to simulate bioprocessing operations i.e. sterilization, fermentation, centrifugation, cell disruption, membrane separations, chromatography. Applies technology to solve problems in bioprocess development, scale-up and optimization.

Autochrom Inc.

113 Cedar Street, Suite 3
Milford, MA 01757
Tel.: 508-478-2670
Fax : 508-478-0217
Established: 1980
Employees: 10
Contact: Mr. Thomas Clemow
Title: President

Product Code:
Laboratory

Product Description:
Manufacturer of automated instrumentation used in data analysis and reduction of liquid chromatographs. Products include data collection and storage software.

AVP Advanced Video Product

543 Great Road
P.O. Box 1450
Littleton, MA 01460
Tel.: 508-486-0024
Fax : 508-369-8644
Established: 1985
Employees: 24
Contact: Ms. Catherine Goliash
Title: President

Product Code:
Other

Product Description:
Image display, transmission archiving.

Bard Cardiosurgery

129 Concord Road
Billerica, MA 01821
Tel.: 508-663-5353
Fax : 508-663-9250
Established: 1984
Employees: 200
Contact: Mr. Daniel Mulvena
Title: President

Product Code:
Medical/Surgical;Implants/Prostheses

Product Description:
Manufactures specialty products used in cardiopulmonary bypass surgery including oxygenators, cardiotomy reservoirs, hemo-concentrators, and extracorporeal cannulae.

Bard MedSystems Division

87 Concord Street
North Reading, MA 01864
Tel.: 508-664-5900
Fax: 508-664-0013
Established: 1968
Employees: 375
Contact: Mr. Dan Johanson
Title: Vice President and General Manager

Product Code:
Other

Product Description:
Manufactures infusion pumping systems, unit-dose medicine carts and casework, pharmacy packaging systems and pharmacy computer systems.

Betagen Corporation

100 Beaver Street
Waltham, MA 02154
Tel.: 617-899-3400
Fax: 617-899-7063
Established: 1985
Employees: 35
Contact: Mr. Robert DePasqua
Title: President

Product Code:
Suppliers

Product Description:
Automated systems for genetic analysis; two dimensional, radiation imaging system for DNA research called the Betascope 603 Blot Analyzer.

Biogen, N.V.

14 Cambridge Center
Cambridge, MA 02142
Tel.: 617-864-8900
Fax : 617-491-1228
Established: 1978
Employees: 250
Contact: Mr. James Vincent
Title: CEO

Product Code:
Diagnostics;Therapeutics;Animal

Product Description:
Research on products for the AIDS therapeutics, anti-inflamation and selected cancer markets.

Biomedical Technologies, Inc.

378 Page Street
Stoughton, MA 02072
Tel.: 617-344-9942
Fax : 617-341-1145
Established: 1981
Employees: 10
Contact: Mr. Maurice Lamarque
Title: President

Product Code:
Diagnostics;Chemicals;Suppliers

Product Description:
Cell cuture products, radioimmunoassay kits and components, enzyme immunoassay kits, immunohistochemical, reagents and kits, polyclonal and monoclonal antibodies, proteins and other labeling reagents; Radioactive products are also produced.

Bionostics Inc.

8 Craig Road
Acton, MA 01720
Tel.: 617-263-3856
Established: 1983
Employees: 30
Contact: Mr. Bruce Williams
Title: President

Product Code:
Laboratory;Diagnostic;Chemicals

Product Description:
Manufactures chemicals, reagents and controls for blood gas analyzers.

Biopure Corporation

68 Harrison Avenue
Boston, MA 02111
Tel.: 617-350-7800
Fax : 617-350-6614
Established: 1984
Employees: 34
Contact: Mr. Brian McGuinn
Title: President

Product Code:
Therapeutics

Product Description:
Purified oxygen transport medium for in vitro for use in laboratory research in conjunction with liposome encapsulation, blood substitution development, polymerization, coacervation, tissue perfusion and extracorporeal organ studies. Develops biochemical separation.

Biosurface Technology

One Kendall Square
Bldg. 200
Cambridge, MA 02139
Tel.: 617-494-8484
Fax : 617-494-6561
Established: 1986
Employees: 31
Contact: Mr. Dave Castaldi
Title: President

Product Code:
Therapeutic

Product Description:
Epithelial cell culturing service - small skin biopsies obtained from patients are cultured and grown into living sheets of transplantable epithelial tissue.

BioTechnica International, Inc.

85 Bolton Street
Cambridge, MA 02140
Tel.: 617-864-0040
Fax : 617-491-0813
Established: 1981
Employees: 200
Contact: Mr. Norman Jacobs
Title: President

Product Code:
Diagnostics;Agriculture;Chemicals

Product Description:
DMDx test for periodontal disease, silage innoculant, conventional seeds through seed company subsidiary. Researches enzymes, improved genetic engineering of plant and agricultural microorganisms, genetic engineering of plant and agricultural microorganisms, genetic engineering of yeast.

Biotechnology Development Corporation

44 Mechanic Street
Newton, MA 02164
Tel.: 617-965-7255
Fax: 617-965-6952
Established: 1983
Employees: 30
Contact: Mr. Irwin Gruverman
Title: President

Product Code:
Suppliers

Product Description:
Pharmaceuticals, cosmetics, high tech process equipment, surface acoustic sensor devices.

Boston Biomedical, Inc.

375 West Street
W. Bridgewater, MA 02379
Tel.: 508-580-1900
Fax: 508-580-2202
Established: 1988
Employees: 18
Contact: Mr. Richard Schumacher
Title: President

Product Code:
Diagnostics;Suppliers

Product Description:
Processing of blood based components for infectious disease diagnosing test systems. The focus is on HIV (AIDS), HTLV (adult T-cell leukemia) and viral hepatitis. Offers facility as site for clinical trials to in vitro test kit manufacturers.

Boston Scientific Corp.

480 Pleasant Street
Watertown, MA 02172
Tel.: 617-926-5026
Established: 1980
Employees: 350
Contact: Mr. Peter Nicholas
Title: President

Product Code:
Medical/Surgical

Product Description:
Electrodes, cables, leads and gels, needles, syringes, tubings, tubes and catheters.

Bryan Corp.

8 Johnson Street
Woburn, MA 01801
Tel.: 617-935-0004
Employees: 10
Contact: Mr. Frank Burton
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures fibre optic examining equipment and accessories, including osteoscopes, bronchoscopes, laparoscopes, hysteroscopes, endoscopic foreceps and bronchial tubes.

Cambridge Analytical Associates, Inc.

1106 Commonwealth Avenue
Boston, MA 02215
Tel.: 617-232-2207
Fax : 617-731-1358
Established: 1979
Employees: 100
Contact: Mr. Martin Wolf
Title: President

Product Code:
Environmental

Product Description:
Destruction of chemical wastes in soil and groundwater using naturally occuring microorganisms. Provides chemical analysis services and hazardous waste remediation services.

Cambridge BioScience

365 Plantation Street
Worcester, MA 01605
Tel.: 508-797-5777
Fax : 508-797-4014
Established: 1981
Employees: 105
Contact: Mr. Gerald Buck
Title: Chairman & CEO

Product Code:
Diagnostics;Therapeutics;Animal

Product Description:
AIDS Diagnostics and other diagnostics including those for the detection of rotavirus, adenovirus group antigens, gastroenteritis and respiratory viruses. Also develops vaccines.

Cambridge Medical Technology

575 Middlesex Turnpike
Billerica, MA 01865
Tel.: 508-667-2161
Fax : 508-667-8651
Established: 1960
Employees: 55
Contact: Mr. Joseph Carroll
Title: President

Product Code:
Diagnostics;Animal

Product Description:
Broad range of immuno diagnostic kits with clinical and veterinary applications.

Cambridge Neuroscience Research, Inc.

One Kendall Square
Bldg. 700
Cambridge, MA 01239
Tel.: 617-225-0600
Fax : 617-225-2741
Established: 1986
Employees: 33
Contact: Mr. Alan Dalby
Title: President

Product Code:
Therapeutics

Product Description:
Development of patented products for the diagnosis, treatment and prevention of neurological and psychiatric disorders.

Cambridge Technology, Inc.

23 Elm Street
Watertown, MA 02172
Tel.: 617-923-1181
Established: 1979
Employees: 15
Contact: Mr. Edward Grenda
Title: President

Product Code:
Suppliers

Product Description:
Cell harvesting instruments for laboratory automation.

Candela Laser Corp.

530 Boston Post Road
Wayland, MA 01778
Tel.: 508-358-7637
Fax : 508-358-5602
Established: 1970
Employees: 105
Contact: Dr. Horace Furumoto
Title: CEO

Product Code:
Medical/Surgical

Product Description:
Manufactures flashlamp, excited dye lasers and related accessories.

Cardiodata Corp.

71 Lyman Street
Northboro, MA 01532
Tel.: 508-393-6330
Fax : 508-393-7594
Established: 1971
Employees: 36
Contact: Mr. Charles Feldman
Title: President

Product Code:
Monitoring

Product Description:
Manufactures holter monitoring equipment.

Cardiovascular Instrument Corp.

134 Water Street
Wakefield, MA 01880
Tel.: 617-245-7799
Established: 1965
Employees: 12
Contact: Mr. Edward Urkiewicz
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures a line of heart/lung equipment and related accessories.

Cellcor Therapies, Inc.

1256 Soldiers Field Road
Boston, MA 02135
Tel.: 617-782-2204
Fax : 617-782-2132
Established: 1987
Employees: 28
Contact: Mr. Gary Cashon
Title: President

Product Code:
Diagnostics

Product Description:
Clinical research trials in in-vitro activated lymphocytes for the treatment of Renal Cell carcinoma. Firm has five research sites. Research includes antigen specific cancer therapy as well as utilizing lymphocyte immunization process for transplantation.

Charles River Biotechnical Services

251 Ballardvale Street
Wilmington, MA 01887
Tel.: 508-657-6500
Established: 1982
Employees: 100
Contact: Mr. James Foster
Title: President

Product Code:
Suppliers

Product Description:
Contracts production of monoclonal antibodies in mouse fluid and utilizes CRBS's patented Opticell cell culture technology. Also engaged in sale of Opticell systems to companies for in-house cell culture production.

ChemDesign Corporation

99 Development Road
Fitchburg, MA 01420
Tel.: 508-345-9999
Fax: 508-342-9769
Established: 1983
Employees: 50
Contact: Mr. Richard Brooks
Title: Chairman & CEO

Product Code:
Chemicals;Suppliers

Product Description:
Production of protected amino acids. Large, intermediate, small-scale production of protected amino acids on a custom basis and separation technologies.

ChemGenes Corporation

925 Webster Street
Needham, MA 02192
Tel.: 617-449-5051
Established: 1981
Employees: 10
Contact: Dr. Suresh Srivastava
Title: President

Product Code:
Suppliers

Product Description:
DNA chemical intermediates and biomedical diagnostic DNA.

Collaborative Research, Inc.

2 Oak Park
Bedford, MA 01730
Tel.: 617-275-0004
Fax: 617-275-0043
Established: 1961
Employees: 130
Contact: Dr. Orrie Friedman
Title: President

Product Code:
Diagnostics;Therapeutics;Chemicals;Suppliers

Product Description:
Development of diagnostic tests for genetic diseases based on DNA probe technology.

Computer Design and Application

8 Centennial Drive
Peabody, MA 01961
Tel.: 508-977-3030
Fax: 508-977-9220
Established: 1977
Employees: 100
Contact: Mr. David Birhner
Title: President

Product Code:
Diagnostic;X-Ray

Product Description:
Manufactures medical imaging systems.

Cordell Engineering

6 Centennial Drive
Peabody, MA 01960
Tel.: 508-532-4200
Fax : 508-532-6877
Established: 1963
Employees: 50
Contact: Mr. Richard Reedy
Title: President

Product Code:
X-Ray

Product Description:
Equipment that develops medical and dental X-ray film.

CoStar Corp

One Alewife Center
Cambridge, MA 02140
Tel.: 617-868-6200
Fax : 617-868-2076
Established: 1946
Employees: 400
Contact: Mr. Richard Morningstar
Title: President

Product Code:
Laboratory

Product Description:
Manufactures disposable laboratory products and filtration devices.

Covalent Associates, Inc.

52 Dragon Court
Woburn, MA 01801
Tel.: 617-938-1140
Established: 1981
Contact: Dr. Victor Koch
Title: President

Product Code:
Suppliers

Product Description:
Conducts research and development on novel biosensor concepts. Exploring surface-selective chemically modified electrodes for a variety of applications in fermentation processes.

Creative Biomolecules

35 South Street
Hopkinton, MA 01748
Tel.: 508-435-9001
Established: 1981
Employees: 21
Contact: Dr. Charles Cohen
Title: President

Product Code:
Suppliers

Product Description:
Technology for the commercial-scale production of protein based products.

Crystal Biotech

75 South Street
Hopkinton, MA 01748
Tel.: 508-435-9039
Fax : 508-435-5289
Established: 1987
Employees: 10
Contact: Mr. Roy Bouvier
Title: President

Product Code:
Laboratory

Product Description:
Manufactures blood flow probes and instruments for medical research. Product is called the VF-1 Pulsed Doppler Blood Velocimeter.

Crystal Diagnostics

30 Commerce Way
Woburn, MA 01801
Tel.: 617-933-4114
Fax : 617-935-2865
Established: 1982
Employees: 35
Contact: Mr. John Schulte
Title: President

Product Code:
Diagnostics;Environmental

Product Description:
Developing disposable diagnostic services capable of quantitatively measuring substances in blood and urine.

Damon Biotech, Inc.

119 Fourth Avenue
Needham Heights, MA 02194
Tel.: 617-449-6002
Fax : 617-449-4010
Established: 1983
Employees: 100
Contact: Mr. Joseph Lovett
Title: Sr. Vice President

Product Code:
Diagnostics;Therapeutics;Animal;Chemicals

Product Description:
Contracts the production of monoclonal antibodies for use in human health care industry. Research includes production of chimeric antibodies, recombinant antibodies and controlled release technology for hormones and vaccines.

Damon Corp.

Ultrasound Division
115 Fourth Street
Needham Heights, MA 02194
Tel.: 617-449-0800
Fax : 617-449-7547
Established: 1986
Employees: 6
Contact: Mr. Daniel Cotte
Title: President

Product Code:
Diagnostic;Medical/Surgical

Product Description:
Portable ultrasound scanner.

Damon Corp.

115 4th Avenue
Needham Heights, MA 02194
Tel.: 617-449-0800
Fax : 617-449-0588
Established: 1958
Employees: 3400
Contact: Mr. David Kosowsky
Title: CEO

Product Code:
Laboratory

Product Description:
Manufactures centrifuges, clinical laboratory products, coagulation testing equipment, micotomes and cryogenic microtomes.

Dan Kar Corporation

P.O. Box 279
Reading, MA 01867
Tel.: 617-944-1550
Established: 1976
Employees: 10
Contact: Mr. Terry Hahan
Title:

Product Code:
Suppliers

Product Description:
Protein and DNA sequencer equipment.

Diagnostic Electronics Corp

221 Crescent Street
Waltham, MA 02154
Tel.: 617-893-4000
Fax : 617-893-7343
Established: 1968
Employees: 15
Contact: Mr. Greg Wortheimer
Title: President

Product Code:
Monitoring

Product Description:
Manufactures medical electronics equipment.

Dynamedics Inc.

P.O. Box 51
Lincoln, MA 01773
Tel.: 617-899-4433
Established: 1985
Employees: 2
Contact: Mr. Richard Wiggin
Title: President

Product Code:
Monitoring

Product Description:
Manufactures products for ambulatory and physician office blood pressure monitoring and measurement.

Dynatech Corp.

3 New England Executive Park
Burlington, MA 01803
Tel.: 617-272-6100
Fax : 617-272-2304
Established: 1959
Employees: 3100
Contact: Mr. J.P. Barger
Title: President

Product Code:
Laboratory

Product Description:
Manufactures electronic-based test and measurement instruments for laboratory applications.

Dyonics Inc.

160 Dascomb Road
Andover, MA 01810
Tel.: 508-470-2800
Fax : 508-470-2193
Established: 1964
Employees: 210
Contact: Mr. Charles Federico
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures arthroscopy and orthopedic surgical instruments, light sources and light guides.

ElectroScan Corporation

66 Concord Street
Wilmington, MA 01887
Tel.: 508-988-0055
Fax : 508-988-0062
Established: 1985
Contact: Mr. Richard Melanson
Title: President

Product Code:
Lab;Chemicals;

Product Description:
Develops and manufactures the Environmental Scanning Electron Microscope (ESEM) which permits the observation of any specimen in its natural state with high resolution, high magnification, high depth of field, and at a much higher pressure than a typical SEM.

Endogen, Inc.

451 D Street
Boston, MA 02210
Tel.: 617-439-3250
Established: 1983
Employees: 10
Contact: Mr. Owen Dempsey
Title: President

Product Code:
Laboratory; Diagnostics; Therapeutics; Chemicals; Suppliers

Product Description:
Produces research biologicals including Interleukin-1, Anti IL-1, Anti TNF aplha (cachectin), Anti Lymphotoxin (TNF beta) and Anti IL-2 neutralizing antibodies. Also produces natural Tumor Necrosis Factor (Human) and developed the first ELISA to determine Interleukin-2 levels in plasma, serum & culture supernatants.

Enzyme Center, Inc.

36 Franklin Street
Malden, MA 02148
Tel.: 617-322-4885
Employees: 30
Contact: Mr. Stanley Charm
Title: President

Product Code:
Suppliers

Product Description:
Large scale fermentation, separation and purification of enzymes and biological material.

Enzytech, Inc.

763 D Concord Avenue
Cambridge, MA 02138
Tel.: 617-661-0940
Fax: 617-864-5824
Established: 1987
Employees: 14
Contact: Mr. Mark Skaletesky
Title: CEO

Product Code:
Food;Chemicals

Product Description:
Delivery systems for protein drugs. Stabilization, modification, use and delivery of catalytically and therapeutically active proteins and polypeptides. Development of natural, functional food ingredients using enzymes in non-traditional environments.

ESA, Inc.

45 Wiggins Avenue
Bedford, MA 01730
Tel.: 617-275-0100
Fax : 617-275-5529
Established: 1968
Employees: 100
Contact: Mr. A.V. Block
Title: President

Product Code:
Laboratory

Product Description:
HPLC instrumentation and electrochemical detectors for biomedical research.

Fenwal Electronics, Inc.

450 Fortune Blvd.
Milford, MA 01757
Tel.: 508-478-6000
Fax : 508-473-6035
Established: 1955
Employees: 340
Contact: Mr. William Degnan, Jr.
Title: President

Product Code:
Monitoring;Medical/Surgical

Product Description:
Thermistor (temperature sensitive resistor) assemblies primarily for the measurement of temperature and blood flow.

Filtron Technology Corporation

50 Bearfoot Road
Northborough, MA 01532-1514
Tel.: 508-393-1800
Fax : 508-393-1874
Established: 1984
Employees: 20
Contact: Mr. Martin Hirsch
Title: President

Product Code:
Suppliers

Product Description:
Ultrafiltration systems and devices.

Fiske Med-Science Inc.

1000 Highland Ave
Needham Heights, MA 02194
Tel.: 617-449-4034
Fax : 617-455-8468
Established: 1953
Employees: 45
Contact: Mr. Romano Micciche
Title: President

Product Code:
Diagnostic;Laboratory

Product Description:
Manufactures osmometers, cryoscopes, titrators and pulmonary function test equipment.

Fitzgerald Industries International, Inc.

P.O. Box 608
Acton, MA 01720
Tel.: 508-635-9131
Fax : 508-263-8710
Established: 1989
Employees: 5
Contact: Mr. Edward Fitzgerald
Title: CEO

Product Code:
Diagnostics

Product Description:
Manufactures & manages a large line of immunodiagnostic reagents & can provide unique state-of-the-art technology for firms in the diagnostic field. Focus areas include: monoclonal & polyclonal antibodies, purified antigens, antibody purification, custom controls & serums and conjugates.

Gene-Trak Systems

31 New York Avenue
Framingham, MA 01701
Tel.: 508-872-3113
Fax : 508-879-6462
Established: 1986
Employees: 133
Contact: Mr. Patrick Connoy
Title: President

Product Code:
Diagnostics;Food

Product Description:
Nucleic Acid probe tests for detection of infectious pathogens (salmonella & listeria), HIV-1. Research includes development of non-isotopic probe based tests for detecting pathogens in food and clinical samples.

Genemsco Corporation

Genemsco Beach
Kingston, MA 02364
Tel.: 617-585-3894
Established: 1983
Employees: 10
Contact: Mr. Lawrence Lee Slot
Title: President

Product Code:
Environment;Suppliers

Product Description:
Cell cloning and gene splicing modules called "Dr. Cloner's Genetic Engineering Home Cloning Kits"; electrophoresis apparatus, Caprine-Arthritis-Encephalitis-Virus, and caragheen. Research includes Mytilus edulis byass fiber genetics.

General Scanning, Inc.

Recorder Products Division
37 Broadway
Arlington, MA 02174
Tel.: 617-641-2702
Fax : 617-648-4906
Established: 1968
Employees: 75
Contact: Mr. Gregory Baletsa
Title: Vice President/General Manager

Product Code:
Diagnostic;Monitoring

Product Description:
Manufactures recorder modules for biomedical instruments, galvanometers, and optical scanners. Also O.E.M. supplier to manufacturers of electromedical equipment such as monitors and defilibrators.

Genetics Institute

87 Cambridge Park Drive
Cambridge, MA 02140
Tel.: 617-876-1170
Fax: 617-876-1504
Established: 1981
Employees: 400
Contact: Mr. Tuan Ha-Ngoc
Title: Senior Vice President

Product Code:
Therapeutics;Diagnostics

Product Description:
Products include tPA, GM-CSF, EPO, Factor VIII, Interleukin-3, M-CSF, Cancer therapeutics, bone growth factors, blood cell growth factors. Researches blood cell growth factors, coagulation, and cancer therapy.

Gentest Corporation

6 Henshaw Street
Woburn, MA 01801
Tel.: 617-935-5115
Fax: 617-938-8644
Established: 1983
Employees: 7
Contact: Mr. Charles L. Crespi
Title: President

Product Code:
Suppliers

Product Description:
Research & development and characterization of cell lines with specific capacities to metabolize drugs and environmental chemicals. Focus is on in vitro models of human metabolism. Produces metabolically competent cell lines and Mutagenicity assays in metabolically competent cell lines.

Genzyme Corporation

75 Kneeland Street
Boston, MA 02111
Tel.: 617-451-1923
Fax : 617-451-2454
Established: 1981
Employees: 258
Contact: Mr. Henri Termeer
Title: President

Product Code:
Diagnostics;Therapeutics;Chemicals;Suppliers

Product Description:
Lymphokines for cellular immunology testing, colony simulation factors and growth factors, enzymes and inhibitors for glyconjugates, glycoprotein remodelling technology; therapeutic enzymes for enzyme replacement therapy, diagnostic enzymes and substrates for reagents.

Haemonetics Corporation

400 Wood Road
Braintree, MA 02184
Tel.: 617-484-7100
Established: 1971
Employees: 800
Contact: Mr. John White
Title: President

Product Code:
Laboratory

Product Description:
Manufactures specialized blood processing systems and related disposables used for blood collection and cell fractionation.

Harbor Medical Devices Inc.

25 Drydock Avenue
Boston, MA 02210
Tel.: 617-482-8800
Fax: 617-482-5629
Contact: Mr. William Barrett
Title: Director of Marketing

Product Code:
Medical/Surgical

Product Description:
Manufactures implantable vascular access devices and disposable peripherals.

Harvard Apparatus Inc.

22 Pleasant St
Natick, MA 01760
Tel.: 508-655-7000
Fax: 508-655-6029
Established: 1903
Employees: 55
Contact: Mr. Paul Grindle
Title: CEO

Product Code:
Laboratory

Product Description:
Manufactures biotech research instrumentation, focusing on infusion pumping systems.

Hewlett-Packard Medical Group

3000 Minuteman Road
Andover, MA 01810
Tel.: 508-687-1501
Established: 1957
Employees: 4000
Contact: Mr. Benjamin Holmes
Title: Vice President/General Manager

Product Code:
Monitoring

Product Description:
Manufactures patient monitoring and life support systems.

Hologic, Inc.

300 Bear Hill Road
Waltham, MA 02154
Tel.: 617-890-9944
Fax: 617-890-8031
Established: 1986
Employees: 65
Contact: Mr. S. David Ellenbogen
Title: President

Product Code:
Diagnostic; X-Ray

Product Description:
X-ray bone densitometers.

Holometrix, Inc.

99 Erie Street
Cambridge, MA 02139
Tel.: 617-868-8050
Established: 1986
Employees: 41
Contact: Dr. Judith Kitchell
Title: Manager, Biomaterials

Product Code:
Therapeutics;Animal;Agriculture;Environment;Chemicals

Product Description:
Structural protein design, biomaterials. Research includes controlled release of active agents, wound dressing systems, repair material for avulsive maxillofacial injuries, solid waste disposal process development, biomass conversion to fuels and chemicals.

Hygeia Sciences

330 Nevada Street
Newton, MA 02160
Tel.: 617-964-0200
Established: 1980
Employees: 120
Contact: Mr. Edward Covell
Title: President

Product Code:
Diagnostics

Product Description:
Products include: pregnancy test, ovulation prediction test, strep throat test, gonorrhea test. Research includes the development of diagnostic products utilizing monoclonal and polyclonal antibodies for use by both physicians and consumers.

Immunetics, Inc.

380 Green Street
Cambridge, MA 02139
Tel.: 617-492-5416
Fax : 617-868-7879
Established: 1987
Contact: Dr. Vandana Hingorani
Title: Research Products Manager

Product Code:
Suppliers

Product Description:
The Miniblotter-System for screening multiple antibody samples on Western blots.

ImmunoGen, Inc.

148 Sidney Street
Cambridge, MA 02139
Tel.: 617-661-9312
Fax : 617-661-9334
Established: 1981
Employees: 30
Contact: Mr. Mitchell Sayare
Title: President

Product Code:
Therapeutics

Product Description:
Therapeutics for non-Hodgkins lymphoma, acute lymphoblastic leukemia, acute granulocytic leukemia, breast cancer, colorectal cancer, small cell lung cancer. Research includes monoclonal antibody conjugates for treatment of cancer.

Immunologic Pharmaceutical Corporation

One Kendall Square
Building 600
Cambridge, MA 02139
Tel.: 617-494-0060
Fax : 617-494-1394
Established: 1987
Employees: 23
Contact: Mr. Gustav Christiansen
Title: President

Product Code:
Diagnostics;Therapeutics

Product Description:
Research on the human immune system.

Immunotech Corporation

90 Windom Street
Boston, MA 02134
Tel.: 617-787-1010
Established: 1980
Employees: 26
Contact: Mr. Francis Capitanio
Title: President

Product Code:
Diagnostics

Product Description:
Enzyme immunoassay test kits for various thyroid, steroid and drug tests.

Imreg, Inc.

One Kendall Square
Building 400
Cambridge, MA 02139
Tel.: 617-577-1066
Fax : 617-577-1198
Established: 1986
Employees: 40
Contact: Mr. A. Arthur Gottlieb
Title: President

Product Code:
Diagnostics;Therapeutics;Animal

Product Description:
Develops patented biologics for treatment and diagnositics in which immune function is altered (including IMREG-1 and IMREG-2) These have potential to treat AIDS, ARC, Rheumatoid arthritis, Leprosy, some cancers, Type I Diabetes Mellitus.

Industrial and Biomedical Sensors Corp.

1393 Main Street
Waltham, MA 02154
Tel.: 617-891-4201
Established: 1975
Employees: 15
Contact: Ms. S. Chang
Title: President

Product Code:
Monitoring

Product Description:
Manufactures blood pressure monitors.

Integrated Chemical Sensors Corporation

44 Mechanic Street
Newton, MA 02164
Tel.: 617-965-6950
Established: 1985
Employees: 10
Contact: Dr. Carl Good
Title: President

Product Code:
Suppliers

Product Description:
Biosensors which use monoclonal antibodies and measure environmental pollutants, drugs, hormones, chemical biological warfare agents and other substances.

International Equipment Company

300 Second Ave
Needham Heights, MA 02194
Tel.: 617-449-0800
Fax: 617-444-6743
Established: 1901
Employees: 280
Contact: Mr. Norman Curtis
Title: President

Product Code:
Laboratory

Product Description:
Bench top, large volume, high speed and ultra speed centrifuges, also microtomes, microtome cryotats.

Ionics, Inc.

65 Grove Street
Watertown, MA 02172
Tel.: 617-926-2500
Fax : 617-926-4304
Established: 1948
Employees: 300
Contact: Mr. Arthur Goldstein
Title: President & CEO

Product Code:
Environment;Food;Chemicals;

Product Description:
Membrane systems for purification of biologically active fluids, membranes for use in diagnostic and therapeutic applications. Research includes the development of membranes for separation and purification systems including membranes for electrically driven and pressure driven processes.

Keane Inc.

10 City Square
Boston, MA 02129
Tel.: 617-241-9200
Established: 1987
Employees: 800
Contact: Mr. John Keane
Title: President

Product Code:
Laboratory:Other

Product Description:
Manufactures packaged and customized software products to hospitals. Also provides data processing facilities management services to hospitals.

Koch Process Systems, Inc.

20 Walkup Drive
Westborough, MA 01581
Tel.: 508-366-9111
Fax : 508-870-5930
Established: 1966
Employees: 210
Contact: Mr. W. J. McAuley
Title: President

Product Code:
Suppliers

Product Description:
Ultrafiltration membrane separation systems, biotech liquifiers and purification equipment.

Laboratory Technologies Corp.

400 Research Drive
Wilmington, MA 01887
Tel.: 508-657-5400
Established: 1980
Employees: 30
Contact: Mr. Fredrick Putnam
Title: President

Product Code:
Laboratory

Product Description:
Manufactures software packages for laboratories, and test measurement for IBM PC computers.

Level 1 Technologies, Inc.

83 Enterprise Dr.
Marshfield, MA 02050
Tel.: 617-834-0023
Fax: 617-837-8402
Established: 1986
Employees: 40
Contact: Mr. Gary Tureski
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures and distributes blood and fluid warmers. The System 500 warms cold blood to body temperature at 500 ml/minute which is ten times faster than conventional blood warmers. The System 500 is used in trauma and transplant surgery.

Lifeline Systems, Inc.

One Arsenal Marketplace
Watertown, MA 02172
Tel.: 617-923-4141
Fax: 617-923-1384
Established: 1974
Employees: 200
Contact: Mr. L. Dennis Shapiro
Title: President

Product Code:
Handicap Aids;Home Health Care

Product Description:
Personal emergency response systems for use in the home.

Luxtec Corp.

Technology Park
Sturbridge, MA 01566
Tel.: 508-347-9521
Fax : 508-347-5704
Established: 1982
Employees: 43
Contact: Mr. John Ronnquist
Title: CFO

Product Code:
Medical/Surgical

Product Description:
Manufactures fibre optic instruments, including headlights, retractors and video headlight camera systems.

Macrochem Corporation

9 Linnell Circle
Billerica, MA 01821
Tel.: 508-670-5800
Fax : 508-670-5824
Established: 1981
Employees: 17
Contact: Mr. George Stevens
Title: President

Product Code:
Therapeutics;Chemicals

Product Description:
Research includes TNLY drug to reduce prostate cancer growth, TCNA drug to reduce bone calcium loss, ANTILON drug to control epilepsy, absorption enhancers for transdermal drug delivery. Heparin absorption filter, blood plasma volume expander.

Mansfield Scientific

135 Forbes Boulevard
Mansfield, MA 02048
Tel.: 508-339-4112
Employees: 110
Contact: Mr. John Pavlic
Title: General Manager

Product Code:
Medical/Surgical

Product Description:
Electrodes, cables, leads, gels, tubings, tubes and catheters.

Matec Applied Systems

75 South Street
Hopkington, MA 01748
Tel.: 508-435-9039
Fax: 508-435-5289
Established: 1982
Employees: 15
Contact: Mr. David Cannon
Title: President

Product Code:
Laboratory

Product Description:
Manufactures instruments for characterizing colloidal suspensions. Particle size analysis, Beta potential determination, automatic titrations.

Matec Instruments

75 South Street
Hopkington, MA 01748
Tel.: 508-435-9039
Fax : 508-435-5289
Established: 1972
Employees: 20
Contact: Mr. Roy Bouvier
Title: President

Product Code:
Laboratory

Product Description:
Manufactures a high powered ultrasonic non-destructive test of evaluation (NDT/E) instruments. Also manufactures instruments for characterizing materials and composites.

Matritech, Inc.

763 D Concord Avenue
Cambridge, MA 02138
Tel.: 617-661-6660
Established: 1987
Employees: 10
Contact: Mr. Stephen Chubb
Title: President

Product Code:
Diagnostics

Product Description:
Antibodies to select proteins of human cell nuclei for use in the detection of cancer.

Medi-Tech Inc.

480 Pleasant Street
Watertown, MA 02172
Tel.: 617-923-1720
Employees: 100
Contact: Mr. Joseph Ciffolillo
Title: President

Product Code:
Medical/Surgical

Product Description:
Syringes and needles, tubings, tubes and catheters.

Medica Corporation

14 DeAngelo Drive
Bedford, MA 01730
Tel.: 617-275-4892
Fax : 617-275-2731
Established: 1979
Employees: 25
Contact: Mr. Robert Hagopian
Title: President

Product Code:
Laboratory

Product Description:
Manufactures sodium-potassium analyzers for small clinics, laboratories and physician's offices.

Medical & Scientific Designs Inc.

333 Weymouth St., #12
Rockland, MA 02370-1144
Established: 1980
Employees: 55
Contact: Dr. Charles Rogers
Title: President

Product Code:
Laboratory

Product Description:
Manufactures products for diagnostic immunology laboratories, including automated assay processors and immunoassay reagents.

Medisense, Inc.

128 Sidney Street
Cambridge, MA 02139
Tel.: 617-492-2373
Fax : 617-576-6560
Established: 1982
Employees: 10
Contact: Mr. Ron Zwanziger
Title: President

Product Code:
Diagnostics;Animal;

Product Description:
Research and development includes monoclonal antibodies, immunoassay, human diagnostics, polyclonal diagnostics, human diagnostic DNA, veterinary DNA diagnostics.

Memtek Corporation

28 Cook Street
Billerica, MA 01821
Tel.: 508-667-2828
Fax : 508-667-1731
Established: 1979
Employees: 90
Contact: Saul Sternberg
Title: Vice President

Product Code:
Diagnostics;Therapeutics;Environment;Suppliers

Product Description:
Develops and produces bioactive membranes for affinity separations, bioproducts harvesting, therapeutic plasma treatment and diagnostics.

Mentor O & O, Inc.

3000 Longwater Drive
Norwell, MA 02061
Tel.: 617-871-6950
Fax : 617-871-7785
Established: 1981
Employees: 100
Contact: Mr. Richard Young
Title: Chairman

Product Code:
Ophthalmic

Product Description:
Diagnostic and surgical equipment for opthalmology.

MicroCal, Inc.

22 Industrial Drive, East
Northampton, MA 01060
Tel.: 413-586-7720
Fax : 413-586-0149
Established: 1979
Employees: 12
Contact: Dr. John Brandts
Title: President

Product Code:
Laboratory

Product Description:
MicroCal MC-2 Differential Scanning Calorimeter and the MicroCal OMEGA titration Calorimeter.

Microfluidics Corporation

44 Mechanic Street
Newton, MA 02164
Tel.: 617-965-7255
Established: 1983
Employees: 16
Contact: Mr. David Halverson
Title: President

Product Code:
Suppliers

Product Description:
High-performance mixing, dispersion and cell disruption equipment which produces liposomes and emulsions.

Micron Medical Products Inc.

Sawyer Passway
Fitchburg, MA 01420
Tel.: 508-345-5000
Established: 1972
Employees: 116
Contact: Mr. Robert Sullivan
Title: President

Product Code:
Diagnostic;Monitoring

Product Description:
Manufactures silver/silver chloride plated sensor elements for use as components of disposable electrodes, including EKG/ECC and related instruments.

Micron Separations, Inc.

135 Flanders Road
P.O. Box 1046
Westborough, MA 01581
Tel.: 508-366-8212
Established: 1982
Employees: 55
Contact: Dr. John Greenwood
Title: President

Product Code:
Suppliers

Product Description:
Manufactures hydrophobic and hydrophillic nylon filters, supported cellulose filters and microfilter membranes.

Microvasive Inc.

31 Maple Street
Milford, MA 01757
Tel.: 508-478-2956
Established: 1981
Employees: 100
Contact: Mr. Robert DePasqua
Title: President

Product Code:
Medical Surgical

Product Description:
Endoscopic accessories.

Milligen

186 Middlesex Turnpike
Burlington, MA 01803
Tel.: 617-275-5208
Established: 1986
Employees: 130
Contact: Mr. Alain Massot
Title: President

Product Code:
Suppliers

Product Description:
Instruments and chemicals for the synthesis and sequence analysis of DNA and proteins.

Millipore Corporation

Ashby Road
Bedford, MA 01730
Tel.: 617-275-9200
Fax : 617-875-2050
Established: 1954
Employees: 3100
Contact: Mr. John Gilmartin
Title: President & CEO

Product Code:
Suppliers

Product Description:
Life science tools including new generation biomolecular instrument and reagents systems for peptide and DNA synthesis and protein sequencing. HPLC instrument chemistries and methodologies for isolating and purifying biomolecules and membrane devices.

MIRA

87 Rumford Avenue
Waltham, MA 02154
Tel.: 671-894-2200
Fax : 617-647-1855
Established: 1962
Employees: 65
Contact: Mr. Luc Schepens
Title: President

Product Code:
Opthalmic

Product Description:
Manufactures surgical instruments and materials for use in the opthalmic field.

MP Video

65 South Street
Hopkinton, MA 01748
Tel.: 508-435-2131
Fax : 508-435-2227
Established: 1974
Employees: 30
Contact: Mr. Melvin Prehovitz
Title: President

Product Code:
Medical/Surgical

Product Description:
Medical sterilizable video cameras for endoscopy, automatic fibre optic light sources, medical video accessories.

New England Biolabs

2 Tozer Road
Beverly, MA 01915
Tel.: 508-927-5054
Established: 1974
Employees: 32
Contact: Mr. Donald Comb
Title: President

Product Code:
Suppliers

Product Description:
Restriction endonucleases; enzymes involved in nucleic acid, metabolism, ligases, methylases, exonucleases, DNA substrates, M13 DNA sequencing systems, oligonucleotides, linkers, custom synthesis.

Nourse Farms, Inc.

RFD PO Box 485
South Deerfield, MA 01373
Tel.: 413-665-2658
Established: 1969
Employees: 25
Contact: Mr. Timothy Nourse
Title: President

Product Code:
Agriculture

Product Description:
Virus testing and tissue culture production.

Nova Biomedical Corp.

200 Prospect Street
Waltham, MA 02254
Tel.: 617-894-0800
Fax : 617-899-0417
Established: 1976
Employees: 500
Contact: Mr. Robert Coleman
Title: President

Product Code:
Diagnostic

Product Description:
Electrolyte analyzers for routine hospital use or emergency applications. Blood gas analyzers and hematology systems.

Olson Medical Sales, Inc.

28 Howe Street
P.O. Box 289
Ashland, MA 01721
Tel.: 508-881-2250
Fax : 508-881-4858
Established: 1947
Employees: 25
Contact: Ms. M.B. Engstrom
Title: President

Product Code:
Medical/Surgical

Product Description:
Disposable custom kits for heart surgery, including tubing, connectors, filters, reservoirs and oxygenators.

Omni-Flow Inc.

317 New Boston Street
Wilmington, MA 01887
Tel.: 508-935-5440
Fax : 508-938-0104
Established: 1983
Employees: 30
Contact: Mr. James Coutre
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures infusion pumps.

Optical Diagnostic Systems Inc.

46 Manning Road
Billerica, MA 01821
Tel.: 508-667-8111
Fax : 508-671-0812
Established: 1983
Employees: 15
Contact: Dr. Emile Kamieniecki
Title: President

Product Code:
X-Ray

Product Description:
Manufactures X-ray imaging systems.

Optical Micro Systems, Inc.

83 Pine Street
Peabody, MA 01960
Tel.: 508-532-2112
Fax : 508-535-8013
Established: 1981
Employees: 35
Contact: Mr. Jeffery Hightower
Title: President

Product Code:
Ophthalmic

Product Description:
Ophthalmic surgical instrumentation.

Organomation Asociates, Inc.

266 River Road West
Berlin, MA 01503
Tel.: 508-393-2602
Fax : 508-838-2786
Established: 1959
Employees: 8
Contact: Mr. Neal McNiven
Title: General Manager

Product Code:
Laboratory

Product Description:
Laboratory evaporators and extractors.

Orion Research Inc.

529 Main Street
Boston, MA 02129
Tel.: 617-242-3900
Fax : 617-242-4195
Established: 1962
Employees: 434
Contact: Mr. Alexander Jenkins
Title: President

Product Code:
Laboratory

Product Description:
Manufactures ion-selective electrodes.

Osteo-Technology

55 New York Avenue
Framingham, MA 01701
Tel.: 508-875-0101
Fax : 508-875-7636
Established: 1984
Employees: 17
Contact: Mr. Thomas Sherwin
Title: President

Product Code:
Diagnostic

Product Description:
Manufactures and distributes the Signet instrument which uses ultrasound velocity to measure bone fragility in patients who may be at risk for traumatic fractures due to osteoporosis. The instrument consists of a small desktop console and a hand-held ultrasound probe.

Polaroid Corporation

575 Technology Square
Cambridge, MA 02139
Tel.: 617-577-2000
Established: 1938
Employees: 10000
Contact: Dr. Thomas O'Brien
Title: VP International Marketing

Product Code:
Diagnostic

Product Description:
Medical and dental imaging products.

Precision Systems Inc.

16 Tech Circle
High Tech Park
Natick, MA 01760
Tel.: 508-665-7010
Established: 1962
Employees: 35
Contact: Mr. Charles Bell
Title: President

Product Code:
Laboratory

Product Description:
Manufactures osmometers and calcium titraters.

Pulpdent Corporation

80 Oakland Street
P.O. Box 780
Watertown, MA 02272
Tel.: 617-926-6666
Fax : 617-926-6262
Established: 1947
Employees: 35
Contact: Mr. Harold Berk
Title: President

Product Code:
Dental

Product Description:
Dental consumables.

Questek Inc

44 Manning Road
Billerica, MA 01821
Tel.: 508-667-9919
Fax: 508-667-6790
Established: 1982
Employees: 47
Contact: Mr. Gary Klauminzer
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures excimer lasers.

Radiation Monitoring Devices, Inc.

44 Hunt Street
Watertown, MA 01581
Tel.: 617-926-1167
Fax: 617-926-9743
Established: 1974
Employees: 40
Contact: Mr. Gerald Entine
Title: President

Product Code:
Diagnostic;Monitoring;Medical/Surgical

Product Description:
Custom instrumentation for the detection of radiation, measurement of brain, kidney, liver and heart function, detection of tumor sites tagged via monoclonal antibodies, biotech analytical instrumentation.

Radionics Inc.

76 Cambridge Street
Burlington, MA 01803
Tel.: 617-272-1233
Established: 1948
Employees: 30
Contact: Mr. Bernard Cosman
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures products used in neurology including intracranial pressure monitors and measuring units, cerebrospinal and hydrocephalic catheters and shunts, forceps, electrodes, and ultrasonic transducers.

Rainin Instrument Co., Inc.

Mack Road
Woburn, MA 01801
Tel.: 617-935-3050
Established: 1963
Employees: 95
Contact: Mr. Kenneth Rainin
Title: President

Product Code:
Laboratory

Product Description:
Manufactures chemicals, equipment and accessories for liquid chromatography.

Ranfac Corp.

Avon Industrial Park
Avon, MA 02322
Tel.: 508-588-4400
Fax: 508-584-8588
Established: 1888
Employees: 50
Contact: Mr. Robert Adler
Title: President

Product Code:
Medical Surgical

Product Description:
Manufactures hypodermic instruments.

Repligen Corporation

One Kendall Square, Building 700
Cambridge, MA 02139
Tel.: 617-225-6000
Fax: 617-494-1786
Established: 1981
Employees: 75
Contact: Mr. Sanford Smith
Title: President/CEO

Product Code:
Diagnostics;Therapeutics;Suppliers

Product Description:
Manufactures biochemical products for the healthcare market. Products include extracorporeal plasma filtration device for the treatment of cancer and autoimmune diseases, based on rProtein A (tm), rDNA 120 antigenic fragments for AIDS diagnosis, AIDS vaccine, lingin-degrading and modifying enzymes for pulp processing.

Research Biochemicals Inc.

9 Erie Drive
Wayland, MA 01778
Tel.: 508-358-7162
Established: 1980
Employees: 10
Contact: Evelyn Friedman
Title: President

Product Code:
Laboratory

Product Description:
Manufactures biochemicals related to neuro-chemistry.

RNA Medical

2 Craig Road
Acton, MA 01720
Tel.: 508-263-6162
Fax : 508-263-2860
Established: 1976
Employees: 10
Contact: Mr. Bruce Williams
Title: President

Product Code:
Laboratory

Product Description:
Manufactures in vitro diagnostic solutions and reagents. Ph/blood gas controls, blood gas instrument reagents, calibrating gasses and buffers, co-oximeter controls and reagents, ISE controls and reagents.

Rohm Tech, Inc.

195 Canal Street
Malden, MA 02148
Tel.: 617-321-6984
Fax : 617-322-0358
Established: 1986
Employees: 80
Contact: Mr. Ekkehard Grampp
Title: President

Product Code:
Agriculture;Food;Chemicals

Product Description:
Enzymes for food processing with technical service break-up.

Romicon, Inc.

100 Cummings Park
Woburn, MA 01801
Tel.: 617-935-7840
Fax : 617-935-7183
Established: 1972
Employees: 115
Contact: Mr. Robert Cross
Title: President

Product Code:
Suppliers

Product Description:
Ultrafiltration membranes, microfiltration membranes, chromatography media and columns, complete systems for separation and purification. Research includes production development of membranes for separation and purification of bioproteins, cells, cell debris, enzyme and biological production.

Safer, Inc.

189 Wells Avenue
Newton, MA 02159
Tel.: 617-964-2990
Fax : 617-235-6237
Established: 1978
Employees: 50
Contact: Mr. Milton Wilkins
Title: President

Product Code:
Agriculture

Product Description:
Research includes the development of biologically based pesticides and plant care products based upon fatty acid, plant oil and microbial (both naturally occurring and genetically engineered).

Sanaline

19 Union Street
Scituate, MA 02066
Tel.: 617-545-3060
Established: 1975
Employees: 15
Contact: Mr. Richard Powderly
Title: President

Product Code:
Environment;Food;Chemicals;Suppliers

Product Description:
Comprehensive line of microbiological testing products used in testing water, soft drinks, beer, wines and other liquids where enumeration and identification of microorganisms is important.

Schott Fiber Optics, Inc.

122 Charlton Street
Southbridge, MA 01550
Tel.: 508-765-9744
Fax: 508-764-6273
Established: 1954
Employees: 350
Contact: Mr. Brian Edney
Title: President

Product Code:
Diagnostic;Medical/Surgical

Product Description:
Fibre optic endoscopes for diagnostic and therapeutic applications.

SDK Healthcare Information Systems

1550 Soldiers Field Road
Boston, MA 02135
Tel.: 617-783-7351
Fax: 617-783-7351
Established: 1961
Employees: 100
Contact: Mr. Michael Kaufman
Title: President

Product Code:
Other

Product Description:
Manufactures patient care systems and general administrative systems for medical practices and hospitals.

Sepracor Inc.

33 Locke Drive
Marlborough, MA 01752
Tel.: 508-481-6700
Fax : 508-481-7683
Established: 1985
Employees: 68
Contact: Mr. James Mzarek
Title: President

Product Code:
Suppliers

Product Description:
Manufactures membranes for use in the areas of fermentation, extracorporeal blood processing and the manufacture of artificial organs.

Seragen, Inc.

97 South Street
Hopkinton, MA 01742
Tel.: 508-460-0412
Established: 1979
Employees: 70
Contact: Mr. Karl Ahrendt
Title: President

Product Code:
Diagnostics;Therapeutics

Product Description:
RIA kits and supplemental reagents for prostaglandins, throm-boxane, leukotrienes and HETEs. Research on hybrid protein molecules that home in on specific types of cancer cells and on the immune cells responsible for rejecting organ transplants.

Serono Diagnostics, Inc.

100 Longwater Circle
Norwell, MA 02061
Tel.: 617-871-3962
Fax : 617-871-6766
Established: 1969
Employees: 100
Contact: Mr. Hersh Petrocelly
Title: President

Product Code:
Diagnostics

Product Description:
U.S. marketing and distribution of diagnostic products manufactured by Ares Serono Group Companies throughout the world.

Shiley Infusaid Inc.

1400 Providence Hwy
Norwood, MA 02062
Tel.: 617-769-8330
Fax : 617-769-0072
Established: 1981
Employees: 150
Contact: Mr. Richard Meelia
Title: President

Product Code:
Medical/Surgical:Implant/Protheses

Product Description:
Manufacture implantable medical pumps.

Sil-Med Corp.

700 Warner Blvd.
Taunton, MA 02780
Tel.: 508-823-7701
Established: 1974
Employees: 95
Contact: Mr. Arnold Dessel
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufacture silcone catheters.

Somatix, Inc.

One Kendall Square
Cambridge, MA 02139
Tel.: 617-225-6000
Fax : 617-494-1786
Established: 1988
Employees: 6
Contact: Mr. Gordon Kingsley
Title: President

Product Code:
Therapeutics

Product Description:
Somatic cell therapy using retroviral vectors for gene transfer into somatic cells.

StatSpin Technologies

588 Pleasant Street
Norwood, MA 02062
Tel.: 617-551-0100
Fax: 617-551-0036
Established: 1982
Employees: 23
Contact: Mr. Thomas Kelley
Title: President

Product Code:
Laboratory

Product Description:
Develops & manufactures products for collecting, preparing & processing small blood samples. This includes two models of ultra-quiet, small high tech centrifuges for rapid sample preparation. Also, a 95 second lipemia clearing system "LipoClear" that does not require an ultracentrifuge, and a system for preparing samples for HDL cholesterol analysis.

Sudbury Systems Inc.

49 Boston Post Road
Sudbury, MA 01776
Tel.: 508-443-1100
Fax: 508-443-1129
Established: 1972
Employees: 20
Contact: Mr. Howard Cohen
Title: President

Product Code:
Other

Product Description:
Manufactures random access voice storage and retrieval systems for radiology and clinical reports.

Summit Medical Technology Inc.

150 Coolidge Avenue
Watertown, MA 02172
Tel.: 617-923-9633
Fax : 617-923-4119
Employees: 21
Contact: Mr. David Muller
Title: President

Product Code:
Medical/Surgical

Product Description:
Manufactures excimer lasers.

System Analysis Corp.

1 Hollis Street
Wellesley, MA 02181
Tel.: 617-237-9500
Established: 1976
Employees: 30
Contact: Mr. Robert Sage
Title: President

Product Code:
Laboratory;Other

Product Description:
Designs and develop turnkey clinical laboratory data processing systems for hospitals.

T Cell Sciences, Inc.

840 Memorial Drive
Cambridge, MA 02139
Tel.: 617-864-2160
Fax : 617-864-0854
Established: 1984
Employees: 90
Contact: Mr. James Grant
Title: CEO

Product Code:
Diagnostics;Therapeutics

Product Description:
Developing diagnostic and therapeutic products for the detection, monitoring and treatment of immune system disorders, including autoimmune diseases and infectious diseases, and certain cancers.

Thermedics

470 Wildwood St.
P.O. Box 12999
Woburn, MA 01801
Tel.: 617-933-3786
Fax : 617-933-4476
Established: 1983
Employees: 129
Contact: Mr. John Wood
Title: President

Product Code:
Laboratory;Implants/Protheses

Product Description:
Manufactures biomedical products and biomaterials.

Thermo Cardiosystems

470 Wildwood Street
P.O. Box 2697
Woburn, MA 01888
Tel.: 617-932-8668
Fax: 617-933-4476
Established: 1988
Employees: 40
Contact: Mr. John Wood
Title: President

Product Code:
Implant/Prostheses;Medical/Surgical;Therapeutic

Product Description:
Develops pneumatic and electric ventricular assist devices.

Transgenic Sciences, Inc.

365 Plantation Street
Worcester, MA 01605
Tel.: 508-752-4442
Fax: 508-754-3519
Established: 1987
Employees: 8
Contact: Mr. James Sherblom
Title: President

Product Code:
Therapeutics;Agriculture;Chemical

Product Description:
Researches & develops products designed to improve the efficiency of pharmaceutical & chemical product development & biopharmaceutical R & D. Protox (tm) is a short term in vitro assay for tumor promoters based on cytoskeleton aberrations induced in cultured mammalian cells after brief exposure to promoters or complete carcinogens.

Tropix

47 Wiggins Avenue
Bedford, MA 01730
Tel.: 617-271-0045
Fax: 617-275-8581
Established: 1986
Employees: 16
Contact: Ms. Patricia McGrath
Title: President

Product Code:
Suppliers;Diagnostics

Product Description:
Develops & manufactures luminescent molecules & enhancers for detecting substances in chemical & biological samples and products for decentralized diagnostic market segments. Marketing of analytical test kits, photo sensitive film, photon detecting instruments for bioanalysis.

Waters Chromatography Div.

34 Maple Street
Milford, MA 01757
Tel.: 508-478-2000
Fax: 508-872-1990
Established: 1962
Employees: 1075
Contact: Mr. Chane Graziano
Title: President

Product Code:
Chemicals;Suppliers

Product Description:
Development of instruments, chemicals, & methodologies for protein purification, amino acids analysis, DNA isolation & analysis, neuro-transmitter analysis, characterization of carbohydrates, HPLC instrument.

ZMI Corporation

500 West Cummings Park
Woburn, MA 01801
Tel.: 617-933-9150
Fax : 617-933-1807
Established: 1981
Contact: Mr. Rolf Stutz
Title: President

Product Code:
Diagnostic;Monitoring;Therapeutic

Product Description:
External pacemaker pulse generator with ECG monitor (non-evasive). External pacemaker/defibrillator combination with ECG monitor (non-evasive). ECG electrodes disposal.

Zymark Corporation

Zymark Center
Hopkinton, MA 01748
Tel.: 508-435-9501
Fax : 508-626-8652
Established: 1981
Employees: 150
Contact: Mr. Francis Zenie
Title: President

Product Code:
Environmental;Suppliers

Product Description:
Laboratory robotic systems and accessories for chemistry and biotechnology. Systems support and training.

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Genetics Institute	64
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BIOMED SURVEY

Company Name: _____
Address: _____
City: _____ Country: _____
Phone: _____ Fax: _____

Company Contact & Title: _____
Year Established: _____
# of Employees: _____ #of Employees in Sales: ___
Biomed Products as a Percent of Total Sales: _____
Annual Biomed Product Sales: _____

Please indicate by checking below your interest in:

___ Importing and distributing U.S. Biomed Products.
___ Entering into a partnership with a U.S. company to develop and market medical products for the German market.
___ Interested in joint-venture or licensing arrangement with an American firm.

Please circle the category of products that you are interested in cooperating with an American company on:

MEDICAL
Dental
Handicap Aids
Home Health Care Products
Laboratory Equipment & Supplies
Medical Diagnostic Equipment
Medical Implants/Prostheses
Medical Monitoring Equipment
Medical/Surgical
Medical Therapeutic Equipment
Rehabilitation Devices
Other

BIOTECHNOLOGY
Agriculture
Animal Health Care
Environmental Applications
Food Processing
Human Health Care:
- Diagnostics
- Therapeutics

Specialty Chemicals
Suppliers
Other

Please describe below the specific medical products your firm is most interested in cooperating with an American company on:

Please describe your firm's biomedical activities as completely and concisely as possible:

Research:

Products/Services:

Briefly describe your current customer base (for example, size of customer companies and areas they are working in):

Please list the products you are currently distributing or producing:

Which category does your customer base belong to:

__ Under $1 million sales
__ $1 million - $5 million sales
__ $5 million - $50 million sales
__ $50 million - $250 million sales
__ Over $250 million sales
__ Unable to generalize
__ Other

Please list the U.S. companies your company is doing business with and the nature of the relationship. Please include contact address and contact name if possible:

Please describe your sales and support organization:

Please return to:
Massachusetts Office of International Trade and Investment
100 Cambridge Street, Suite 902
Boston, MA 02202 USA
Tel: (617) 367-1830
Fax: (617) 227-3488

Massachusetts
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Investment

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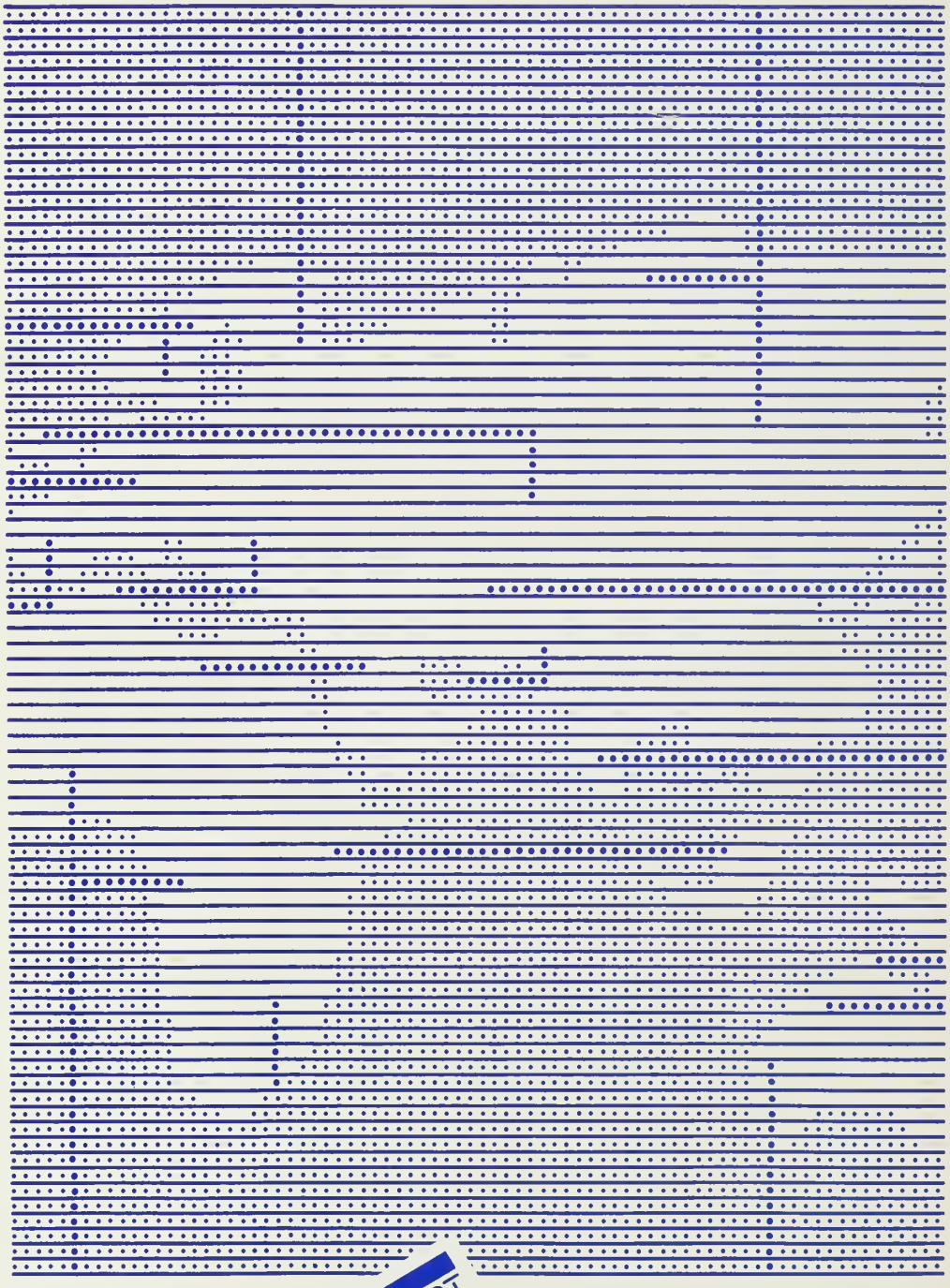

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